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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,700	11/25/2003	Masaru Kihara	032134	3038

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EXAMINER	
ALEJANDRO, RAYMOND	
ART UNIT	**PAPER NUMBER**
1745	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,700	KIHARA, MASARU	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This correspondence is offered in reply to applicant's amendment dated 12/14/06. The applicant has overcome the objections and the 35 USC 103 rejection. Refer to the foregoing amendment for substance of applicant's rebuttal arguments and remarks. However, the present claims are finally rejected over a new ground of rejection as shown hereunder and for the reasons of record:

Claim Disposition

1. Claim 9 has been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohno et al 6130006 view of the Japanese publication JP 10-261412 (heretofore 'the JP'412').

The present application is geared toward a nickel-hydrogen secondary battery wherein the disclosed inventive concept comprises the specific hydrogen-absorbing alloy.

As to claim 1:

Kohno et al disclose illustrate in Figure 2 a battery comprising a case 1, a positive electrode 2, a negative electrode 4, and a separator 3, and alkaline electrolyte (COL 32, line 14 to COL 33, line 60/ FIGURE 2).

Kohno et al's positive electrode includes a nickel hydroxide powder; and may also contain at least one oxide or hydroxide of metal selected from the group consisting of zinc and cobalt (COL 32, lines 49-62).

Kohno et al's negative electrode includes a hydrogen absorbing alloy powder (COL 33, lines 5-10). **Table 7** below shows examples hydrogen absorbing alloy compositions comprising Mg, at least La, at least Co, Al, and nickel. *Thus, Kohno et al directly exemplified and show with sufficient specificity the hydrogen absorbing alloy composition claimed by the applicant.*

TABLE 7

	Compositions
Example 45	$Mg_{0.31}La_{0.69}$ $(Ni_{0.8}Co_{0.1}Al_{0.1})_{3.2}$
Example 46	$Mg_{0.3}La_{0.5}Pr_{0.2}$ $(Ni_{0.8}Mn_{0.15}Si_{0.05})_{3.4}$
Example 47	$Mg_{0.27}La_{0.53}Nd_{0.2}$ $(Ni_{0.8}Mn_{0.1}Co_{0.1})_{3.05}$
Example 48	$Mg_{0.25}Lm_{0.75}(Ni_{0.85}$ $Co_{0.1}Fe_{0.05})_{3.7}$
Example 49	$Mg_{0.24}Lm_{0.76}(Ni_{0.8}$ $Mn_{0.15}Ga_{0.05})_{3.65}$
Example 50	$Mg_{0.34}Lm_{0.66}(Ni_{0.75}$ $Co_{0.1}Mn_{0.1}Al_{0.05})_{3.33}$
Example 51	$Mg_{0.25}Lm_{0.45}Pr_{0.3}$ $(Ni_{0.68}Co_{0.2}Cu_{0.1}Zn_{0.02})_{3.5}$
Example 52	$Mg_{0.28}Lm_{0.62}Nd_{0.1}$ $(Ni_{0.84}Cu_{0.1}Sn_{0.05}B_{0.01})_{3.3}$

As to claims 4-6:

Kohno et al's positive electrode includes a nickel hydroxide powder; and may also contain at least one oxide or hydroxide of metal selected from the group consisting of zinc and

cobalt (COL 32, lines 49-62). *Since Kohno et al disclose that conductive materials can be added to the nickel hydroxide, it is contended that the average valency behavior (i.e. higher than 2) of the nickel contained in the nickel hydroxide is a inherent characteristic thereof first because of the addition of more conductive material, specifically Co, which tends to alter valency upon interaction with Ni, and second because during charging and discharging cycles the nickel hydroxide is compelled to take transitional states for electrochemical reaction purposes.*

As to claim 7:

Kohno et al's positive electrode may also contain at least one oxide or hydroxide of metal selected from the group consisting of zinc and cobalt (COL 32, lines 49-62).

As to claim 10:

Kohno et al's negative electrode is a hydrogen absorbing alloy powder (COL 33, lines 5-10) and may further include La, Ce, Pr, Nd and Y (COL 11, lines 45-55). Examples 45-47 illustrates the inclusion of Co and Al as well (See EXAMPLES 45-47).

Example 45 $Mg_{0.31}La_{0.69}(Ni_{0.8}Co_{0.1}Al_{0.1})_{3.2}$
Example 46 $Mg_{0.3}La_{0.5}Pr_{0.2}(Ni_{0.8}Mn_{0.15}Si_{0.05})_{3.4}$
Example 47 $Mg_{0.27}La_{0.53}Nd_{0.2}(Ni_{0.8}Mn_{0.1}Co_{0.1})_{3.05}$

Example 57 $La_{0.57}Pr_{0.17}Mg_{0.25}Ti_{0.01}(Ni_{0.92}Co_{0.05}Mn_{0.02}Al_{0.01})_{3.54}$

Example 82 $La_{0.63}Nd_{0.1}Mg_{0.27}(Ni_{0.85}Co_{0.1}Cr_{0.03}Fe_{0.02})_{3.7}$

Kohno et al disclose a nickel-hydrogen secondary battery according to the aforementioned aspects. However, Kohno et al do not expressly disclose the specific additional element, and the cobalt compound coated on the nickel hydroxide.

As to claim 1:

The JP'412 makes public that a positive nickel hydroxide positive electrode of an alkaline storage battery has a coating layer comprising a Co-based compound having a valence of more than 2 to cover the Ni-hydroxide particle, and a compound of at least one kind of element selected from a group consisting of at least Ca, Sr, Ba and Yb (ABSTRACT).

As to claims 2-3:

The JP'412 makes public that a positive nickel hydroxide positive electrode of an alkaline storage battery has a coating layer comprising a Co-based compound having a valence of more than 2 to cover the Ni-hydroxide particle (ABSTRACT).

As to claim 8-9:

The JP'412 discloses at least the following compounds: $Ca(OH)_2$ and Yb_2O_3 (P0006).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the art at the time the invention was made to use the specific additional element of the JP'412 in the positive electrode of Kohno et al as the JP'412 discloses a positive electrode having such specific additional element is excellent in utilization factor of nickel hydroxide under atmosphere ranging from an ordinary temperature to a high temperature. Thus, such an additional element positively affects the charging characteristic of the electrode, particularly at a high temperature.

As to the cobalt compound coated on the nickel hydroxide, it would have been obvious to a person possessing a level of ordinary skill in the art at the time the invention was made to use a cobalt compound coating on the nickel hydroxide of the positive electrode of Kohno et al as taught by the JP'412 because the JP'412 discloses that positive electrodes including such a coating material is excellent in utilization factor of nickel hydroxide under atmosphere ranging

from an ordinary temperature to a high temperature. Thus, the cobalt-based layer on the Ni-hydroxide electrode material complements a better utilization of that electrode material.

Response to Arguments

Applicant's arguments with respect to claims 1-8 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro
Primary Examiner
Art Unit 1745

RAYMOND ALEJANDRO
PRIMARY EXAMINER